

REMARKS

Claims 1, 3, 5-7, 10-62 and 64-74 were pending prior to the above amendments.

Claims 16 and 51 are canceled. Claims 1, 17, 36, 52 and 59 are amended to more particularly point out and distinctly claim Applicants' invention.

The Examiner rejected Claims 1, 3, 5-7, 12-16, 18-21, 23-24, 28-29, 33, 36, 40-42, 44, 47, 51-53, 55, 57, 59, 61-62, 66, 68, and 71-74 under 35 U.S.C. § 103(a) as being unpatentable U.S. 6,587,789 ("Diggelen") in view of PCT Patent Publication WO1999056145 ("Moeglein"). With respect to independent Claims 1, 36 and 59, the Examiner states:

Regarding claims 1,36,59, Diggelen discloses a method and apparatus for locating mobile receivers using a wide area reference network for propagating ephemeris. Diggelen further discloses an information processing station (108 in Fig. 1) connected and accessible via a data network (see col. 4, lines 27-36), said information processing station having a database to store navigation information regarding satellites. Diggelen further discloses a receiving station (126 in Fig. 1) including a position system receiver and a transmitter, said positioning system receiver receiving position/navigation information from a positioning system and transmitting positioning information to said information processing station via a data link for storage at said database. Diggelen further discloses a mobile unit (118 in Fig. 1) including a positioning system receiver and a wireless receiver, said mobile unit receiving said positioning information from said information processing station via said data network using wireless communication. See col. 3, line 1- col. 4, line 36.

However Diggelen fails to disclose a method wherein the information processing station connected to and accessible via a data network, stores differential correction data.

Moeglin, in the same field of endeavor, teaches a method wherein the information processing station connected to and accessible via a data network, stores differential correction data. See Fig. 2 and page 4, paragraph 2.

Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to provide the

above teaching of Moeglin to store differential correction data in Diggelen's invention in order to acquire position information from GPS satellites and accurately determine the position of the mobile unit in order to avail the location dependent services.

Applicants respectfully traverse the Examiner's rejection. As amended, Claim 1 recites receiving stations calculating and transmitting differential correction to the information processing station:

1. (Currently amended) A positioning information distribution system comprising:

an information processing station connected to and accessible via a data network, said information processing station having a database for storing navigation information regarding satellites in a positioning system and differential correction data;

a plurality of receiving stations each including a positioning system receiver and a transmitter, said positioning system receiver receiving navigational messages from one or more of said satellites in said positioning system, calculating differential correction data relative to its own position, and transmitting said differential correction data and said navigation information extracted from the navigational messages to said information processing station via a data link for storage at said database; and

a mobile unit including a positioning system receiver and a data processing unit, said mobile unit receiving positioning signals from a subset of satellites being in line-of-sight of said mobile unit and communicating with said data network using wireless communication, wherein said mobile unit processes said positioning signals and said navigation information and differential correction data obtained from said information processing station over said data network to compute a measured position of said mobile unit.

(emphasis added)

As the Examiner agrees, Diggelen fails to disclose storing differential correction data at an information processing station. However, Diggelen's and Moeglein's teachings cannot

be combined as suggested by the Examiner, as Moeglein specifically teaches away from providing differential correction data from individual reference receivers, preferring rather that the differential correction data be calculated by a network correction processor:

In one embodiment of the invention, each GPS reference station transmits a representation of at least a portion of the satellite navigation message and the pseudorange data (rather than the pseudorange correction data). The pseudorange correction data can be derived from pseudorange and ephemeris information for a particular satellite. Thus, a GPS reference station may transmit into the network either pseudorange correction data or ephemeris (or both). However, in a preferred embodiment, pseudorange data (instead of pseudorange correction data) is transmitted from each GPS reference station into the network because corrections from different receivers may be derived from different sets of ephemeris data, causing discrepancies in the corrections from different receivers. With this preferred embodiment, a central correction processor (such as network correction processor 110 shown in FIG. 4) uses a consistent set of the most recent ephemeris data received from any of the GPS reference receivers, thus avoiding these discrepancies. The set is consistent because it consists of a group of ephemeris, range measurements (e.g. pseudoranges) and/or corrections from a plurality of satellites which is applicable at one particular instant in time. A set may be merged with other sets of data as long as the times of applicability of each set overlap.

(emphasis added, Moeglein, at paragraph spanning pages 12-13)

Thus, Applicants respectfully submit that the Claim 1, and its dependent Claims 3, 5-7, 12-15, 18-21, 23-24, 28-29, 33 are each allowable over the combined teachings of Diggelen and Moeglein. Claims 36 and 59, and their respective dependent Claims 40-42, 44, 47, 52-53, 55, 57, 61-62, 66, 68, and 71-74 are likewise allowable over the combined teachings of Diggelen and Moeglein. Reconsideration and allowance of Claims 1, 3, 5-7, 12-16, 18-21, 23-24, 28-29, 33, 36, 40-42, 44, 47, 51-53, 55, 57, 59, 61-62, 66, 68, and 71-74 are therefore requested.

The Examiner rejected Claims 17, 25-27, 38-39, 43, 52, 60, 65, and 67 under 35

U.S.C. § 103(a) as being unpatentable over Diggelen and Moeglein, in view of U.S. Patent 6,222,483 ("Twitchell"), the Examiner citing Twitchell for teaching triangulation not taught in Diggelen and Moeglein. Applicants respectfully traverse the Examiner's rejection. As each of Claims 17 and 25-27 depend from Claim 1, the combined teachings of Diggelen, Moeglein and Twitchell under the Examiner's construction are improper and thus do not render obvious the system of Claim 1, as discussed above. Thus, Claims 17 and 25-27 are each allowable over the combined teachings of Diggelen, Moeglein and Twitchell. Similarly, Claims 38-39, 43 and 52, each depending from Claim 36, and Claims 60, 65 and 67, each depending from Claim 59, are each allowable over the combined teachings of Diggelen, Moeglein and Twitchell. Reconsideration and allowance of Claims 17, 25-27, 38-39, 43, 52, 60, 65, and 67 are therefore requested.

The Examiner rejected Claims 10-11, 30-35, 45-46, and 69-70 under 35 U.S.C. § 103(a) as being unpatentable over Diggelen and Moeglin, in view of U.S. Patent 6,583,756 ("Sheynblat"), the Examiner citing Sheynblat for teaching satellite health information not taught in Diggelen and Moeglein. Applicants respectfully traverse the Examiner rejection. Each of Claims 10-11, 30-35, 45-46 and 69-70 depends from one of Claims 1, 36 and 59, and thus are allowable over Diggelen and Moeglein for the reasons stated above. Thus, Claims 10-11, 45-46 and 69-70 are each allowable over the combined teachings of Diggelen, Moeglein and Sheynblat. Reconsideration and allowance of Claims 10-11, 30-35, 45-46 and 69-70 are therefore requested.

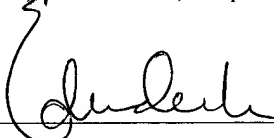
The Examiner rejected Claims 37 and 64 under 35 U.S.C. § 103(a) as being unpatentable over Diggelen and Moeglin, the Examiner taking official notice that the scope of the claimed invention is unchanged by changing the number of GPS satellites from 28 satellites to 24 satellites. Because Claims 37 and 64 depend from Claims 36 and 59,

respectively, each of Claims 37 and 64 are allowable over Diggelen and Moeglein for the reasons already stated above with respect to Claims 36 and 59. Reconsideration and allowance of Claims 37 and 64 are therefore requested.

The Examiner rejected Claims 22 and 56 under 35 U.S.C. § 103(a) as being unpatentable over Diggelen in view of Moeglein, even though neither Diggelen nor Moeglein teaches the use of a T1 link for the data link. The Examiner instead takes official notice that a T1 link is a landline. Because Claims 22 and 56 depend from Claims 1 and 36, respectively, each of Claims 22 and 56 are allowable over Diggelen and Moeglein for the reasons already stated above with respect to Claims 1 and 36. Reconsideration and allowance of Claims 22 and 56 are therefore requested.

For the foregoing reasons, Applicants submit that all pending claims (i.e., Claims 1, 3, 5-7, 10-15, 17-50, 52-62 and 64-74) are each allowable over the prior art of record. Reconsideration and allowance of these claims are respectfully requested. If the Examiner has any questions regarding the above, the Examiner is respectfully requested to telephone the undersigned Attorney for Applicants at 408-392-9250.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on April 4, 2006.



Attorney for Applicant(s)

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Date of Signature

Respectfully submitted,



Edward C. Kwok
Attorney for Applicant(s)
Reg. No. 33,938